NCEC-63C ERIC REPORT RESUME

EC C1C C72 1C-C5-66 CE (REV)

THE USE OF FOLLOW-UP STUDIES IN THE EVALUATION OF VOCATIONAL EDUCATION.

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BTYC5974 BUREAU OF SOCIAL SCIENCE RESEARCH, INC., WASHINGTON, D.C.
BR-5-8461
-MAY-66 CEC-6-COC476-0504
EDRS PRICE MF-$C.09 HC-$1.68 42P.

*FOLLOW-UP PROGRAMS, *VOCATIONAL EDUCATION, MEASUREMENT INSTRUMENTS, *PROGRAM EVALUATION, *TRAINING, STUDENT CHARACTERISTICS, EMPLOYMENT OPPORTUNITIES, *METHODS RESEARCH, NATIONAL PROGRAMS, COMMUNITY PROBLEMS, WASHINGTON, D.C.

FOLLOWUP STUDY TECHNIQUES APPLICABLE TO VOCATIONAL EDUCATION PROGRAMS WHICH WERE CURRENTLY AVAILABLE OR LIKELY TO BECOME AVAILABLE IN THE NEAR FUTURE WERE IDENTIFIED AND DESCRIBED FOR PURPOSES OF PROGRAM EVALUATION. PROCEDURES CONSISTED ESSENTIALLY OF GATHERING AND ANALYZING SECONDARY SOURCE MATERIALS, INCLUDING PERTINENT PUBLICATIONS AND STUDIES. FOLLOWUP EFFORTS WERE FOUND TO BE COMMON IN THE EVALUATION OF VOCATIONAL EDUCATION PROGRAMS IN CERTAIN AREAS OF THE UNITED STATES. THE MOST SERIOUS GAP FOUND WAS THE LACK OF FOLLOWUP INFORMATION AT THE POST-HIGH SCHOOL LEVEL FOR THOSE TRAINED IN TECHNICAL INSTITUTES OR JUNIOR COLLEGES. IT WAS DETERMINED THAT THE MOST SIGNIFICANT NEED IN VOCATIONAL FOLLOWUP RESEARCH WAS A COMPREHENSIVE EVALUATION OF WHAT HAPPENS TO AN INDIVIDUAL WHO HAS BEEN TRAINED. THE MOST PRODUCTIVE DESIGN FOR NATIONWIDE FOLLOWUP PROGRAMS WAS FOUND TO BE A COMBINATION OF TREND AND COHORT STUDY. RECOMMENDATIONS WERE MADE TO PROVIDE SYSTEMATIC NATIONWIDE COVERAGE FOR ALL LEVELS OF VOCATIONAL TRAINING AND FOR ALL VOCATIONAL EDUCATION PROGRAMS. THE CONTINUING NEED WAS EMPHASIZED FOR INTENSIVE, SMALL-SCALE STUDIES OF PARTICULAR AREAS, PROGRAMS, AND FACTORS AND FOR EQUALLY STRONG STUDIES IN LABOR MARKET REQUIREMENTS, EMPLOYER PREFERENCES, AND BEHAVIOR (JH)

5-8461 EO #246

ED010072

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THE USE OF FOLLOW-UP STUDIES IN THE EVALUATION OF VOCATIONAL EDUCATION

Submitted to the U. S. Office of Education
Under Grant Number OEG2-6- 000476-0504
The Vocational Education Act of 1963
P.L. 88-210, Section 4(c)

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The Project Reported Herein Was Supported by a Grant from the
U. S. Department of Health, Education, and Welfare
Office of Education
Bureau of Research
Division of Adult and Vocational Research

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May 1966

PRECEDING PAGE MISSING

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PROJECT SUMMARY

Grant Number OEG2-6-000476-0514

The Use of Follow-Up Studies in the Evaluation of Vocational Education

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Objectives

Three basic objectives were met by this study.

1. To identify and describe follow-up studies pertaining to students of vocational education currently available or likely to become available in the near future. Geographic, program, and time-span coverage were considered as part of this objective.

2. To evaluate the extent to which this information is related to specific vocational education programs and thus serves as one measure of program effectiveness.

3. To reveal information gaps and research needs, and establish a basis for making recommendations about appropriate techniques for meeting these needs. Emphasis here was both on methodological and substantive considerations.

Procedures

Procedures consisted essentially of the gathering of secondary source materials which were examined, and evaluated. Supplementary information (with respect to on-going and unpublished studies) was gathered through correspondence and personal interviews with the respective investigators. Data on on-going programs in the field of vocational education were sought primarily from program specialists in the U. S. Office of Education and private agencies active in this field.

The report of this study consists of findings and recommendations with respect to the objectives as stated above and an annotated

bibliography summarizing the pertinent publications and studies analyzed in connection with this report.

Results and Recommendations

Follow-up studies of vocational education program graduates were demonstrated to be useful tools in the evaluation of training and were recommended for future program assessment. Follow-up efforts were found to be common in the evaluation of vocational education programs in specific areas of the country to the exclusion of other areas and to have included some programs and omitted others. The most serious gap is the lack of follow-up information at the posthigh school level for those trained in technical institutes and junior colleges. Recommendations were made to provide systematic nationwide coverage for all levels of vocational training and for all vocational education programs. Although this should not be the only method of evaluation, it was felt that those who plan vocational education policies should have available to them data on the employment outcomes of those who have been trained.

Perhaps the most important advance in vocational follow-up research is the current concern with the total system involved in training a person for an occupation--the training process, the characteristics of the graduate, the employment situation. The inclusion of the employment situation--short range and long-term opportunities for job seekers, actual skill requirements, evaluation of trained personnel by employers, and predicted changes in employment situations and practices--makes possible a comprehensive evaluation of what happens to the individual who has been trained.

The most productive follow-up design for nationwide, comprehensive follow-up studies was found to be a combination of trend and cohort study. By matching vocational graduates in a given year with nonvocational graduates and conducting follow-up studies at different times would enable researchers to assess differences due to training, and would provide a clearer picture of the effect of training over an extended period of time. At the same time, studies of new cohorts should be initiated at regular intervals and thus provide additional possible comparisons. At the same time, for such studies to have explanatory power, it will be necessary to plan for simultaneous study of other components of the "system" within which training and placement take place: the school and the labor market.

Furthermore, there is continuing need for intensive small scale studies of particular areas, programs, and factors. There is definite need to learn more about the role of specific institutional factors: type of school (comprehensive or vocational), size of school, role of teachers, curriculum experience and content, and guidance and placement services. These are only some of the areas where not enough systematic data are available. The need for study is equally strong in the area of labor market requirements, employer preferences, and behavior.

THE USE OF FOLLOW-UP STUDIES IN THE EVALUATION OF VOCATIONAL EDUCATION

1. Definition of Follow-Up Studies

Follow-up studies involve research designs which require a contact with individuals who have shared an experience in the past and whom the researcher desires to study or restudy. The usual goal of such studies is to arrive at some measure of the impact of the experience on the subsequent behavior or status of these individuals. In the area of vocational education the most widely accepted technique has been to evaluate training programs in terms of occupational outcome over a given period of time. The employment of a graduate in a job for which he received training is the accepted ultimate indicator of successful vocational training, although experts in the field recognize that many indicators other than training-related employment--for example enrollment in posthigh school training, or simple retention in high school through graduation--might be used to measure the "success" of vocational training.[1] The usual technique for obtaining data concerning graduates is one or more follow-up contacts after training or occasionally, the collection of data on trainees through a particular phase of training, with subsequent follow-up.

Studies mentioned in this report and listed in the annotated bibliography are considered to be representative of the use of the

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[1] Report of the Panel of Consultants on Vocational Education, Education for a Changing World of Work, U. S. Department of Health, Education, and Welfare, Office of Education, Washington, D. C.: 1964, p. 89.

follow-up methodology in evaluating vocational education programs.[2] We have attempted to cover the major prototypes and the most significant studies. However, there are many more, not included here, notably small studies of individual vocational systems and local programs whose findings usually have been disseminated on a local basis only.

As will be seen, we have divided the studies reviewed into two major types, descriptive and explanatory studies. Like all typologies, this one is impure: some studies combine the two approaches.

The difference between the two types is primarily a conceptual one. The basic methodology involved in conducting both types of follow-up studies is fundamentally the same, although different research designs are used. The studies require that either the subjects of the research--graduates or students who had participated in training programs--be located and questioned about their current or past employment status, or that persons, such as teachers and employers, who have had contact with them, supply information about the actual subjects of the study. The extent to which the data collected through this follow-up method will yield meaningful findings depends on the quality of the data (appropriateness and randomness of samples, control for nonresponse bias, application of appropriate statistical and analytical techniques) as well as the quality of the design (for example, availability of control groups, provision for time series information, etc.). Thus both descriptive and explanatory studies can be good or bad, valid or invalid, and yield new insights or document the obvious.

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[2] The following vocational education programs were considered for this report: agriculture, home economics, trade and industry, technical, practical nursing and other health programs, distributive occupations. Office occupations and business occupations were omitted because of the recency of federal support of such programs.

Nevertheless it will become apparent to the reader that with a few exceptions we tend to exhibit a bias in favor of the explanatory studies. Our technical reasons are set forth in later pages of this report and need not be anticipated here. But to a large extent, our bias is due to the fact that most descriptive studies are limited to data about the specific employment status of the training graduates at one point in time. The use of this methodology by researchers implies that of overriding importance in evaluating vocational training is the mere fact that the trainees are able to get jobs, without regard as to how well the individual performs in terms of job continuity, promotions, salary received, and amount of responsibility assigned to him. Descriptive studies need not be so narrow: colleges have often undertaken follow-up studies of their alumni which seek to measure the success of their programs by selecting a variety of criteria, including salary, job advancement, job responsibility, as well as activities unrelated to employment. The success of the alumni in all these spheres reflects successful education or training. In the field of vocational education, however, this broad perspective is seldom reflected in past descriptive studies which were examined for this report.

The explanatory studies on the other hand offer hopeful signs that the narrow and self-conscious "placement" criteria are being replaced by more sophisticated evaluation devices, which take a wider view of employment outcomes, and attempt to relate specific training approaches to identifiable changes in the trainee's work life. Occupational results continue to be an important (or even the most important) indicator, but the explanatory study is usually more likely to provide knowledge about

the processes and situations which determine the relationship between training and occupation. In its most ambitious form--the study of the system within which all facets of vocational education interact--the explanatory study holds great promise as an evaluative tool.

2. Descriptive Studies

In general, this type of study describes the characteristics of individuals, groups, or situations by drawing inferences from data primarily with an informative rather than heuristic purpose. Among vocational education follow-up studies this type of study is found in statistical placement reports, one-time descriptive studies, trend studies, and longitudinal studies.

The design of most descriptive studies involves a fairly uncomplicated method of following-up graduates after specific training and obtaining placement information. However, some descriptive studies rely not only on placement data as the major criterion by which to judge the success or failure of vocational training, but supplement placement data with information gathered from employers, school records, and various psychological tests. Trend and longitudinal studies involve more taxing data collection and analysis efforts than do placement reports and one-time descriptive studies.

Placement Reports

The design of a statistical placement report, as commonly used in the evaluation of vocational education, involves the location and contacting of vocational course graduates and the gathering of data which provide the researcher with information about the graduates'

placement status at the particular moment of contact. The findings are presented in the form of tabulations rather than detailed analysis of the data. A list of courses tabulated by number is the usual procedure. The North Atlantic Region placement reports demonstrate the relative ease with which data is obtained. Over the past ten years the proportion of course graduates for whom placement data was unobtainable averaged between five and ten per cent of all graduates. The reports show that the larger states in the region, particularly New York, have relatively the greatest difficulty in contacting graduates (13, 14, 16).

Studies using this design have often been conducted under the direction of an individual state as part of a report to the Federal Government. The North Atlantic Region reports are actually composite state reports. Vocational educators, both teachers and administrators, who may be untrained in research procedures contact the former students and collect the data. Theoretically, placement data is collected at a point in time after graduation, but the procedures are not always clearly spelled out and there is reason to believe that lack of control of untrained personnel may result in the confusion of employment plans obtained from the trainees before graduation with actual employment status six months after graduation. Among users of these data, there is some doubt about the reliability of this procedure.

The format used to present placement information classified the graduates according to the following statuses: In jobs related to training, in jobs not related to training, continued in full-time school, entered armed forces, unemployed, and unaccounted for. The decision to classify a job as related or unrelated to training may be made on the

basis of the individual's self-report or through a comparison of job titles and the particular program in which the graduate was enrolled. Obviously, there is considerable opportunity here for arbitrary decision making. Graduates in military services and those continuing their education are considered unavailable for employment.

Any area, large or small, might be covered by such a study although practice has been for states or groups of states together to undertake this type of evaluation of their vocational education systems. Also, any vocational program or programs may be studied.

As with all follow-up studies, the major difficulty is the location of the intended respondents. However, this problem is minimized here because contact usually occurs shortly after graduation. If the respondent cannot be located, there are persons still available in the area who know where he might be--parents, teachers, friends, etc. With a great deal of effort and money extended coverage is possible even many years after graduation. In the New Jersey study of graduates 91 per cent of the sample was reached ten years following high school graduation (3). In addition, the use of standardized placement status forms makes it relatively easy to conduct this type of study.

Aside from the aforementioned lack of reliability inherent in the data collection, the primary inadequacy found in this study design lies in the fact that it is a statistical report of placement at only one time in the life of the individual rather than a study of career patterns. The basic assumption operative here is the idea that initial placement is crucial in determining long-term occupational choice and

career patterns. One major study of career patterns of one group of vocational students has in fact shown this to be the case. Eninger states that "if the graduate's first job is not in the trade studied or highly related, the chances are high that he will never enter the trade or a highly related trade. But, if his first job is in the trade or a highly related trade, the odds are great that he will stay in the trade" (29). This situation, of course, varies by occupation and may be less likely to persist in the future due to the more rapid rate of economic and technological change.

One-Time Descriptive Studies

A one-time descriptive study is more analytical in its focus. It illustrates a situation or describes individuals at one particular moment in time. In evaluating vocational education this method of study has involved an analysis of the graduate's employment and personal situation after he graduates (or drops out) in relation to his background, ability, and training received. The analysis, often extensive and detailed, is based on data gathered from the teacher, the employer, or the work supervisor in addition to or in place of information gathered from the graduate himself. For example, an evaluation of vocational education for practical nurses was undertaken in Michigan in 1957. Records of students and dropouts were studied, agencies evaluated the practical nurses they employed, and graduate nurses evaluated their own training. In another study, former merchandising students were described according to occupational status, age, training, place of residence, and job progress. These graduates also evaluated their own

training and made recommendations for improvement in the teaching and content of the courses. In a current project Mallinson is comparing the characteristics of persons of posthigh school age who are enrolled in vocational or technical school, are employed, or are looking for work, with the characteristics of their former classmates who have enrolled in higher education. All of these former students had been studied and tested while in school (15, 24, 38).

This type of descriptive study has often been limited in scope, concerned with a particular type of vocational education program of a particular school. Illustrative is a follow-up study of thirty-seven students of one high school distributive education program in Des Moines (8). However, there is no reason why such a study could not be accomplished on a wider scale with extended relevance for other vocational education systems. The most important weakness, as in the statistical placement report, is the reliance on information obtained at one particular moment in time from which to draw conclusions for the past and future. However, this limitation is somewhat lessened by conducting the follow-up at an extended time after training, such as ten years after graduation from the course. Coe and Zanzalari conducted such a study in 1963 of 1953 class graduates of technical training in three vocational high schools in New Jersey. Occupational placement data for each year during the ten year period of the study were obtained from 91 per cent of the graduates (3). The most comprehensive study along these lines was done by Little on all Wisconsin high school graduates (including those of vocational schools) 8 years after graduation. However, this study because of its analytical complexity, has been classified under "explanatory studies" below.

Trend Studies and Longitudinal Studies

The trend study elaborates on the one-time descriptive study design by considering at least two groups or cohorts who had completed vocational training at different times. This allows for a variety of comparisons and provides insights about ongoing processes and trends, with respect to the relation between training and employment. This design was used in the AIR (Eninger) study of Trade and Industry graduates of three classes: 1953, 1958, and 1962. (The study is mentioned here because it provides the best illustration of the trend design. It is actually a hybrid between a descriptive and explanatory study, and belongs more properly into the latter category, where it is classified in the appended bibliography.) The three groups were studied in 1963, 10, 5 and 1 years after completing vocational training. These vocational course graduates were also compared with academic course graduates who attended the same comprehensive high school attended by half the vocational course graduates during the same class years.

A longitudinal study, similar to the one-time descriptive study, but based on data collected from the same sample of individuals at several different points in time obtains a picture of career development rather than placement alone. In studies of the effectiveness of vocational education this has taken the form of before and after studies in which comparisons are made, in terms of employment, of career aspirations before graduation and actual goals achieved after graduation. Furthermore, research has involved contacting individuals at specific time intervals, such as while in high school, shortly after high school graduation, and two years after graduation. By far the most ambitious

vocational education follow-up of this type involves six questionnaires administered over a twenty year period for the purpose of establishing a description of long-term career patterns of practical nurses (12). Obvious difficulties are involved in following respondents over a long period of time after the initial contact, but this design does give a more valuable and accurate picture of the success or failure of vocational training. Occasionally an attempt is made to compare trend and longitudinal data, which at least in theory, would be the most productive device, since the interaction of "career effects" and "trend effects" could be analyzed. To date, this rather sophisticated research approach has not been used. An attempt in this direction can be found in the study by Haines and Ozzelo of high school graduates of cooperative training in which they dealt with two cohorts; they followed up 1963 graduates ten months after graduation (in 1964) and a sample of 1962 graduates previously studied in 1963 (29, 6).

3. Explanatory Studies

The explanatory study attempts to explain a situation, test a theory, or draw inferences of causality. There are two types, diagnostic, which search for possible causes in evaluating a situation, and experimental, which try to create new situations by manipulating the environment and introducing experimental factors to gain an understanding of the actual operation of a system. In these terms the experimental design tries to use the traditional scientific experimental method modified for the study of human social problems. Coster used an experimental design to assess the factors in vocational agricultural education which prepare students for agricultural occupations other

than farming. He did this by comparing three groups who received three different types of vocational training--work experience, classroom study, or part-time work--part-time study. In a similar study, Twyman is studying the effects of three different types of education--vocational, academic, or vocational and academic combined--on the career outcomes of high school dropouts who were reenrolled in school and assigned to one of three groups. These studies manipulate the training situation and then draw conclusions from the differing results of the respective training methods (28, 41).

In a more unorthodox experiment Kaufman uses different types of "opportunities" for high school dropouts to assess the economic and psychological effects of the differential situational settings. The "opportunities" involved are the opportunity to earn a high school diploma or to receive training for a specific occupation (33).

Diagnostic studies are far more common. The diagnostic design tries to measure various dimensions and aspects of a problem to broaden the basis for understanding. Characteristic of the use of this design is a series of studies being conducted by Ulman in California concerned with the relationship of the labor market to vocational education needs. Data gathering for this study involves surveying employers, union officials, employment and placement service personnel, as well as high school dropouts and graduates (42). Other diagnostic studies of vocational education students have used the explanatory methodology to study the part played by vocational education in the working lives of graduate trainees and the effectiveness of vocational education. In such studies the effect of vocational education on the lives and employment career patterns of the individuals trained is perhaps best exhibited.

Data for these studies is collected from all or any of the sources which are connected with vocational education although custom has been to go directly to the individual concerned. Instruments commonly used to gather data include psychological tests, school records, and check lists of activities. Analysis is extensive and deeply involved in psychological, sociological, and economic dimensions. Several such studies are currently in progress, but none have been completed, although partial results are becoming available (34, 40).

Another approach to the diagnostic follow-up study of vocational students is primarily comparative, and involves groups who have received different types of vocational education. (In effect, to some extent this is an ex post facto "experimental" design, as described earlier.) Its purpose is to find explanations for differing employment histories in differing characteristics of groups, or in differing qualities and types of vocational training. Types of comparisons have involved differences of race, academic versus vocational training, completion and noncompletion of training, and on-the-job training versus institutional training. For instance, McKechnie makes comparisons between those who completed training and those who dropped out in terms of employment results and Kahn and Bachman plan to compare the effects of three patterns of education and socialization--high school, employment, and unemployment--among individuals who, when first contacted for study, are high school sophomores. Plans have been made to contact these students at eighteen month intervals over a three year period during which time some students will have experienced employment and unemployment (32, 39).

With the development of sophisticated computer techniques and programs--enabling researchers to handle simultaneously a very large number of variables--it is possible, at least in theory, to design diagnostic studies which encompass the total vocation educational system. Project Talent with its design for detailed analysis of the American high school and high school students over an extended time span might have done this type of analysis easily if a larger number of vocational schools had been included in the sample. However, thirty-five vocational schools in a national sample of 17,878 high schools did not yield sufficient data for comparisons between vocational and nonvocation school systems and students (30).

Eninger's study, however, may eventually yield such an analysis for Trade and Industry graduates. This entire study (to date only partially analyzed) sought to describe and analyze the process and product of vocational education and rests on the following equation: vocational experience is the product of the interaction of the vocational school system, the vocational human (the student) and regional vocational characteristics (the job opportunity structure).

These newer, diagnostic studies represent a radical change in the evaluation of vocational education, which up to this time has relied on placement in the field of training as the preferred method of evaluation. However, while each study has considerable methodological and substantive merit in the aggregate they are too limited in geographic and program coverage to supply a basis for the measurement of the results of vocational education efforts for the country as a whole.

4. Areas Covered by Past and Current Research

In the past, certain areas of the country and certain states have undertaken follow-up evaluations more often than others. The Northeast has been covered annually by the placement reports of thirteen states of the North Atlantic Region extending from Maine to West Virginia. Several midwestern and western states--Michigan, Wisconsin, Iowa, Illinois, California, Nebraska, and Oregon--have either conducted studies of their systems of vocational training or have been the location for follow-up studies within their boundaries. Except for occasional small studies the South has been virtually neglected by follow-up evaluation. This may not be altogether accidental. Vocational training for Negroes in southern states has been operating under restrictions imposed by employment discrimination patterns: Negroes were not offered training opportunities in fields where they were not traditionally employed (48).

The current emphasis appears to be directed toward national studies, such as the American Institute for Research study or the study of nursing education, which view one type of vocational program in all parts of the country (12, 29). This emphasis does not imply that individual vocational systems or particular areas within states are not being studies (28, 35, 36, 40).

Time-span coverage in the past has concentrated on placement at one time in the job history of the individual soon after training has ended. However, there appears to be a trend to an increasing number of longitudinal or cohort--trend studies, ranging from before and after graduation studies, to the comparisons of different types of students

over time, or to panels studies, with recanvassing of the same subjects for many years. Such studies give a more continuous picture of employment history of the individuals studied and the long-term effects of training than does a one time census type data collection but they are costly and difficult, largely because of attrition problems.

Every major area of vocational education has been the subject of follow-up research at some time but not all types of programs have been studied equally in depth, at all levels of training. Most past and current research involves vocational education at the high school level--Eninger studied graduates of high school trade and industrial programs, Cook plans to study the relationship between high school training and entry jobs for office and retail trade occupations. Corazzini plans to follow technical students through high school and subsequent placement, Levinson has studied a cross-section of vocational students after graduation from high school and the comprehensive studies by Sewell and Kaufman also deal with cross-sections of high school populations (29, 26, 27, 33, 35, 40).

At the postsecondary level there have been very few studies. The U. S. Office of Education has conducted brief follow-up studies of home economics teacher education; Schmitt and Tyler studied practical nurses in Michigan in 1957; McKechnie is studying students enrolled in night courses; and Mallinson is directing a study of students of post-secondary vocational education (21, 22, 15, 39, 38). At this level research coverage is particularly weak. We know practically nothing about the students or graduates of postsecondary or supplementary vocational education. A major gap in this area is lack of knowledge of

the junior college student enrolled in occupational training. In general, when follow-up studies of junior college students have been undertaken, concern has been with transfer to higher educational institutions rather than occupational outcome related to training even though many students are enrolled in the occupational rather than academic curriculum. The American Association of Junior Colleges has emphasized the great need to evaluate the vocational programs in junior colleges through follow-up of former students and urges junior colleges to undertake studies of their own graduates. The Association has tried to encourage such studies by publishing a guide to conducting follow-up studies which includes examples of questionnaires used by particular schools (45).

Beyond studies of junior college students, very little research of any kind has been conducted which concerned itself with adults who have been enrolled in vocational education programs. Adult extension programs or part-time vocational training are of major importance in the area of vocational education both because of the number of individuals involved (in 1963, 45 per cent of the total enrollment in vocational education programs were adults enrolled in extension programs) and the relatively large proportion of federal funds (in 1964, 20% of the federal expenditures were for adult programs) allocated for adult vocational training. No doubt, this neglect of adult students in follow-up studies is primarily a result of the difficulty of locating the scattered population of adult students enrolled in part-time courses. Furthermore, in many instances, no systematic records are kept for this group of students. Yet, follow-up studies concerned with these persons are vitally necessary if vocational education is to be evaluated as a total system. We should know who these people are, why

they are taking these training courses, and what relationship this training has to their employment life.

Program coverage has not been even. Most research has involved trades and industry, distributive education, or agricultural programs. Home economics and health occupations have not been studied at the high school level, but have been the subject of research at the posthigh school level where most other programs have been neglected. Although work is still being done on particular programs, such as the study of training students for nonfarm agricultural jobs by Coster, many current studies tend to consider jointly all vocational offerings or juxtaposing graduates from vocational and academic or general programs. For instance, Kaufman and Shaefer are studying 5,000 vocational, academic, and general curriculum graduates with a view to preparation for employment and Loomis is studying the relationship of vocational education training to specific requirements necessary for employment (28, 34, 37).

Reliance on the use of crude placement data as the major criterion in assessing vocational training appears to be lessening as evidenced by new research planned to examine the economic situation of the area in which training is being evaluated. Furthermore, the researchers feel that it is not enough to know that an individual is employed in a field related to his high school training, although this is an important point. They want to know if the individual possessed the requisite skills for the job and if he is actually using his training in some way. Ulman plans to study all areas of the labor market in their relationships to training individuals for jobs and Cook will assess the employment requirements and the training received by recent graduates (42, 26).

Although many of the studies recently completed or now under way make substantive contributions to the problem of evaluating the occupational results of vocational training programs, there remain sizable gaps. The need for comprehensive geographic coverage is imperative, especially in order to obtain some baseline data on the results of vocational training offered to the large number of Negro youths who are educated in southern states. Inseparable from follow-up data on graduates are inputs about institutional factors of the vocational education system--the selection processes of the training course, the program retention of students, the role of teachers, and the content of the programs. For the graduates themselves, we need to know more about long-term career patterns, as well as about the students' attitudes toward employment and training. Neither has there been sufficient evaluation of outcome in relation to type of school--comprehensive or vocational--nor an assessment of the new trend in area technical schools.

Although a few of the studies reviewed here deal with this issue, not enough information is as yet available about the nature of optimal preparation for the various types of jobs for which vocational students are trained. Broad and general job training, on-the-job work experience, very specific training in a specific job-skill area, training in "job behavior and human relations," and combinations of these--which is preferred by students or employers and thought appropriate for successful long-term employment? A recent study by the U. S. Department of Labor throws some light on the way in which persons now in the labor force acquired their training (49). Current emphasis on specific skill training as preparation for a life-time occupation must be constantly evaluated in the light of trends in job

innovation and obsolescence lest a situation result in which individuals trained for skilled jobs find their training outdated.[3]

Perhaps the most important advance in vocational education follow-up research is the concern with the total system involved in training a person for an occupation--the training process, the characteristics of the graduate, the employment situation. It is the inclusion of the employment situation--short range and long-term opportunities for job seekers, actual skill requirements, evaluation of trained personnel by employers, and predicted changes in employment situations and practices--which makes possible a comprehensive evaluation of what happens to the individual who has been trained. Until recently, this perspective was not incorporated in vocational education follow-up research.

5. Long-Range Recommendations

Follow-up studies of vocational education program graduates have been demonstrated to be useful tools in the evaluation of training and should be available as a regular input for future program assessment. Although this should not be their only judgment criterion, those who plan vocation education policies must have available to them data on the employment outcomes and experiences of those who have been trained. Because vocational programs are expanding and changing rapidly and because available data are spotty--both with regard to area and program coverage--it is necessary to develop comprehensive follow-up programs which can provide essential feedback. In addition to studies which

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[3]Lawrence J. Barnett, "Does Education for Work, Work?". The Urban Review, May 1966.

will provide systematic nationwide follow-up data for all levels of vocational education, special studies should be undertaken in the areas of the country which have been neglected, such as the South, and in program areas which often have been omitted or overlooked in research, such as postsecondary or supplementary training, home economics or technical education programs. The growing field of office occupations, which has only recently become a "vocational training" area in terms of federal involvement, should of course, be included in future studies. Because of the trend toward increasing employment of women, especially at the end of the child-rearing period, female as well as male graduates should be studied. The most promising current research studies--except in nursing--tend to be limited to men.

For nationwide, comprehensive follow-up studies, there can be little doubt that the most productive follow-up design is a combination of trend and cohort studies. As shown earlier in this discussion this will yield the best kind of descriptive study, one that lends itself to meaningful analytical treatment. By matching vocational graduates in a given year with nonvocational graduates and follow-up of these graduates at different times one would be able to assess the differences due to training and one would be able to obtain a clearer picture of the effect of training over an extended period of time. At the same time, studies of new cohorts should be initiated at regular intervals, for example, every three years. In each case, random samples of men and women in all programs and at all levels should be included. An ideal scheme is outlined below (see sketch). A ten year program, involving between two and four separate contacts with three successive cohorts,

would yield not only the three cohort studies (of differing time span of course, ranging from three to nine years), but also several trend studies: those comparing cohorts, one and three years out of school at various points in time as well as people nine, six, and three years out at a given point in time (see sketch). While it may not be practical to field so ambitious a study plan, the advantage of the successive cohort study should be taken into consideration in all phases of research planning. At the same time, for such studies to have explanatory power, it will be necessary to plan for simultaneous study of the other components of the "system" within which training and placement take place: the school and the labor market. Ideally again, in each of the contact years (1967, 1970, 1973, and 1976 in the example shown) institutional data (for example, class size, enrollment, teacher characteristics) and relevant labor market data should be collected and incorporated in the analysis.

Concurrently with this elaborate set of successive cohort studies, the need for intensive small scale studies of particular areas, programs, or factors should be undertaken. The need for explanatory studies, far from being exhausted by the studies now in progress, becomes more pressing as new programs and techniques are being introduced, as they will be at an accelerated rate under the provisions of the Vocational Education Act. There is definite need to learn more about the role of specific institutional factors: type of school (comprehensive or vocational), size of school, role of teachers, curriculum experience and content, and guidance and placement services are but some of the areas where not enough systematic data is available so that judgments can be made regarding the types of variables to be used as inputs for the systems analysis referred to above.

ILLUSTRATIVE SCHEMA FOR SUCCESSIVE COHORT STUDIES

Contact Year	High School Graduation Year		
	Cohort A (June 1966) Graduates, dropouts, rejected applicants who would have graduated in this class.	Cohort B (June 1969) Graduates, dropouts, rejected applicants etc.	Cohort C (June 1972) Graduates, dropouts, rejected applicants, etc.
June 1967	1 year following	- - - - -	- - - - -
June 1970	3 year following	1 year following	- - - - -
June 1973	6 year following	3 year following	1 year following
June 1976	9 year following	6 year following	3 year following

The need for study is equally strong in the area of labor market requirements, employer preferences and behavior. Here too, many more explanatory microstudies must be developed--with emphasis on sociological and psychological, as well as economic and technical factors--before sophisticated macrostudies can yield the kind of information which policy makers in the field of vocational education need.

There is every reason to believe that with the initiation of comprehensive follow-up studies of the type recommended here, supplemented by intensive studies of particular factors and experiences in the training setting and the economy, a much clearer picture of the actual workings and effectivness of vocational training would be obtained. This could be of immense help in bringing vocational education, occupational requirements, and productive individual careers into closer congruence.

6. Bibliography

I. DESCRIPTIVE STUDIES

1. Barlow, Melvin L., Ramos, Pas Gomez, and Tague, Jeanne M. A Study of Vocational Nursing Programs in California. Los Angeles: Division of Vocational Education, University of California, 1961.

   1958 graduates of thirty-seven vocational nursing programs were surveyed by mail questionnaire one year after graduation in order to determine how well they had been trained. Respondents were described according to age, sex, and type of employment or reason for unemployment. Training was evaluated by the graduates and found adequate although need for additional training was expressed.

2. Burgener, V. E. What Happens to Distributive Education Enrollees in Illinois? Springfield: State of Illinois Board of Vocational Education, 1963.

   A study designed to determine the status (occupational, educational, military, housewife, etc.) of all high school students who had been enrolled in a distributive education course during 1959 - 1960. Findings indicate that more than half of the former students were employed and fewer than one per cent were unemployed. In further analysis, distributive education students, when compared to other types of students, were found to be low scholastically.

3. Coe, Burr D. and Zanzalari, J. Henry. After Ten years -- A Ten Year Follow-up of Middlesex County Vocational and Technical High School Graduates. New Brunswick, New Jersey: 1964.

   The 1953 graduating classes of three vocational high schools in New Jersey were studied in 1963 to determine the occupational, educational, marital, and armed services experiences in the intervening ten year period. It was determined, from 91 per cent who returned the questionnaire, that the technical education received was of very high quality. During the ten years covered in the study most graduates available for employment held jobs for which they had been trained.

4. Connecticut State Department of Education. Summary of 1962 Graduates. Hartford: Division of Vocational Education, Bureau of Vocational Technical Schools, n.d.

   A report of the placement of graduates of 14 vocational-technical schools as part of the North Atlantic Region's annual placement report (see below). Included in this report is a 10 year (1952-1962) placement comparison of graduates and for 1962 alone, placement tabulations by occupation and school for men and women.

5. Haines, Peter G. and Coleman, Brendan. How High School Cooperative Trainees Fare in the Labor Market. (Educational Research Series, 16), East Lansing: Office of Research and Publications, College of Education, Michigan State University, 1963.

A follow-up study of 1962 high school graduates who received training for distributive, office, and trade and industrial occupations. The effectiveness of the programs was measured by the assessment of employment status ten months after graduation. Sixty-two per cent of the graduates were employed full-time, 14 per cent part-time, and 29 per cent were continuing their education.

6. Haines, Peter G. and Ozzelo, Lawrence M. How High School Cooperative Trainees Fare in the Labor Market; Phase B. (Educational Research Series, 23), East Lansing: Bureau of Educational Research Services, College of Education, Michigan State University, 1965.

A follow-up study of 1963 high school graduates ten months after graduation and a follow-up of a limited sample of 1962 graduates previously studied ten months after graduation. Data showed that full-time employment, employment in the field of training, and employment by the cooperative employer were common.

7. Hartford State Technical Institute. Graduate Survey 1961. Hartford, Conn.: n.d. (Mimeographed.)

A report of graduates of Hartford State Technical Institute classes of 1948 through 1960, with regard to salary, job classification, employment locale, and type and extent of additional formal education.

8. Jarchow, Ronald. "Follow-Up Survey," Distributive Keynotes, (Spring Issue, 1963-1964), Des Moines: Department of Public Instruction, State of Iowa.

A small study of 37 students aimed at determining the effectiveness of the distributive education program in training for future employment. More than half of these students were employed in distributive jobs.

9. Mason, Ralph E. and Haines, Peter G. Cooperative Occupational Education and Work Experience in the Curriculum. Danville, Illinois: The Inter-State Printers and Publishers, 1965.

A state-wide (Michigan) study concerned with the effectiveness of secondary school training programs measured by the assessment of employment status ten months after graduation. Employment was found quickly after graduation and many graduates were employed by their training employer.

10. Matteson, Gerald. "Vocational Training and Employment Opportunities for Rural Youth," Annual Report, Madison: Center for Studies in Vocational and Technical Education, University of Wisconsin, 1965.

    A study, in progress, planned to evaluate high school vocational education for selected male graduates in their post-high school employment.

11. Mohs, Milton C. Employer Evaluations of 1,000 Placements -- A Study. Pasadena, California: Pasadena City College, 1961.

    A report of employer evaluations of 1,000 former junior college students, both graduates and drop-outs, three months after start of employment. The employers neither praised nor criticized the training or education, but emphasized personality traits, particularly as they were related to the area of human relations, in discussion of strengths and weaknesses of the employees. The author suggests that educating students for "broad field" areas of employment to facilitate carry-over from one job to another would be beneficial to students. Also included is a brief summary of a 1954 survey of vocational students.

12. National League for Nursing, Inc. Nurse Career Pattern Study. New York: 1962.

    A planning statement describing a study in progress, which consists of a series of six questionnaires to be used to gather data from students entering four types of nursing programs and followed over a twenty year period to determine the characteristics of the students and their career patterns.

13. North Atlantic Region. Follow-Up Study of 1956 Graduates of Trade and Industrial Programs in Public Vocational and Technical High Schools. Washington, D.C.: U.S. Office of Education, Trade and Industrial Education Branch. (Annually to 1959)

    Statistical tabulations of graduate placement data by the states of the North Atlantic Region. The report contains summary data of preparatory courses tabulated by occupation and composite tabulations of courses by states and school districts for all day trade and industrial programs and part-time cooperative programs.

14. _____. Follow-Up Study of 1959 Graduates of Trade and Industrial Programs in Public Vocational and Technical High Schools. Washington, D.C.: U.S. Office of Education, Trade and Industrial Branch. (Annually.)

    Graduate placement report by the states of the North Atlantic Region modified by tabulating data by sex as well as by occupation and course for all day trade and industrial programs and part-time programs.

15. Schmitt, Mary and Tyler, Ralph. Facts about Practical Nurse Education in Michigan. East Lansing: Department of Public Instruction, Michigan State University, 1957.

An evaluation study of the Michigan program for education of practical nurses conducted by visits to eight practical nurse education centers and appraisals by employers and graduates during 1952 and 1953. A check list of activities was developed and filled out by graduates and supervisors. The study concluded that the test of effectiveness of the program is to be found in the competence of the graduates.

16. State of Arizona. 1964-1965 Follow-Up Summary. Phoenix, 1966, (Mimeographed.)

A very brief summary of placement information concerning 558 graduates of vocational training. Most graduates were not available for employment, primarily because they were attending school. However, of those employed, the majority held jobs in the occupation for which they were trained.

17. Tate, Barbara and Knopf, Lucille. "Nursing Students -- Who Are They?" The American Journal of Nursing, 65 (September, 1965).

A preliminary report of the findings of a twenty year study of nurse career patterns under the sponsorship of the National League for Nursing (see above) begun in 1962. A follow-up study of 14,500 students of professional and practical nursing schools, involving a questionnaire which gathered biographical data, reason for entry into the program and career goals, was reported.

18. Thomas, Virginia F. Enrollment in Home Economics Education and Employment Status of Graduates the First Year Following Graduation 1962-1963. Washington, D. C.: U.S. Office of Education, Division of Vocational and Technical Education, 1964.

This study was concerned with the occupational outcomes of graduates of home economics teacher education. College administrators reported that the first year following graduation 66 per cent of the graduates were employed as teachers, most of whom were teaching home economics.

19. _____. Home Economics Enrollment in Colleges and Universities and Placement of Graduates Prepared to Teach, 1958-1959. Washington, D. C.: U. S. Office of Education, Division of Vocational Education, 1960.

A statistical summary of enrollment in approved and reimbursed and approved college and university home economics education programs found that about two-thirds of the graduates taught home economics the first year following graduation.

20. United States Department of Health, Education, and Welfare. Enrollment in Home Economics Education and Placement of Graduates from Institutions Reimbursed from Federal Vocational Educational Funds. Washington, D. C.: Division of Vocational Education, 1959.

A 10-year (1947-48 to 1956-57) summary which found that 65-70 per cent of the graduates of teacher-training programs accepted jobs as home economics teachers the first year after graduation. Enrollment in home economics education is summarized by four geographic regions of the country.

21. United States Office of Education. What Becomes of the Home Economics Education Graduate. Washington, D. C. Bureau of Educational Assistance Programs, Division of Vocational and Technical Education, 1963. (Mimeographed.)

A survey of the employment status of home economics education graduates the first year after graduation in 1960-1961. Ninety-nine per cent of the administrators of colleges and universities, whose programs are approved by state boards for vocational education for the preparation of teachers of vocational home economics programs, reported that the majority of graduate teachers were employed as teachers and most taught home economics.

22. United States Office of Education, Division of Vocational and Technical Education. Placement of Graduates from Technical Education Programs for Fiscal Year 1962. (Draft Misc. No. 3612.) (Mimeographed.)

Placement statistics of graduates and salary range by occupational field provided by the states.

23. University of Illinois, College of Education, Department of Vocational and Technical Education in cooperation with the University of Iowa, Programs in Health Occupations Education. Practical Nurse Study. Washington, D. C.: U. S. Office of Education, sponsor. (Prospectus.)

A 39-month study being conducted in Illinois and Iowa during the period 1965-1968 in the following three phases: 1. a sample of practical nurses and supervisors will be interviewed to identify occupational functions and patterns of the licensed practical nurse, 2. test of applicants and enrollees in a sample of practical nurse programs to determine characteristics of applicants, students, graduates, and programs, and 3. follow-up of applicants, dropouts, and graduates by personal interview to determine relationships between the characteristics of the individuals, programs attended, and employment situations.

24. Van Wagenen, Marilene. A Fifteen-Year Sampling Survey of Former Merchandising Students at Sacramento City College. Sacramento, California: 1964.

    An evaluation of progress, defined according to the field of employment, success in the occupation and satisfaction with the occupation, among students trained in retailing during the past fifteen years (1949-1963). From the data collected by the 45 per cent return of the mailed questionnaire (included), the author found that many students had remained with the cooperative education employer. Further, all of the men not in college were either employed or in the military service. Fifty per cent of the women were employed. Very often jobs held were in the field of training or a related field. Most students held favorable opinions of the training received.

25. Vocational Agriculture Staff. A Follow-Up Study of Students of Vocational Agriculture in Virginia Who Graduated or Dropped Out of High School in 1954, 1957, 1960, and 1963. Richmond: State Department of Education, 1963. (Mimeographed.)

    A study conducted to determine the occupational status of former high school students, both graduates and dropouts, who had completed at least one year of vocational agriculture education during the selected school years. The survey concluded that the longer students remain in vocational agriculture classes, the more likely they are to engage in farming and related occupations.

II. EXPLANATORY STUDIES

26. Cook, Fred. S. (Project Director). "Opportunities and Requirements for Initial Employment of School Leavers with Emphasis on Office and Retail Jobs." Detroit: Wayne State University, 1963. (Study Proposal.)

    A study which proposes to develop an entry-job index which will provide continuous information and which will result in a constant balance of curricula for preparation of youth for work according to employment requirements and needs. Former students will be surveyed to determine the relationship between employment history and high school training. Hiring practices of firms which provide entry jobs will be surveyed.

27. Corazzini, A. J. "The Economics of Vocational Education. An Analysis of Benefits and Costs," Conference on Follow-Up Studies in Educational Research, November 1965, Madison: Center for Studies in Vocational and Technical Education, University of Wisconsin, 1965. (Study Proposal)

    A proposal to study and assess the economic benefits of the vocational technical school to the individual graduate and to the local market. This study plans to make comparisons with direct, indirect, and opportunity costs of maintaining the school. A class of vocational school students will be followed through four years of school and subsequent placement after graduation. Evaluation of placement and training services of the school is planned.

28. Coster, John K. An Experimental Evaluation of Approaches to Preparing High School Students for Agricultural Occupations Other Than Farming. Washington, D. C.: United States Office of Education, 1965. (Mimeographed Project Summary.)

    A study conducted during 1965-1966 with students of 24 high schools in Nebraska who have been divided into three groups acquiring different types of vocational agriculture education -- work experience, classroom study, and part-time work -- in an attempt to assess the factors which bear on the preparation of students for non-farm jobs. Teachers will be trained to follow-up students to evaluate the effects of training and later performance.

29. Eninger, Max U. (Project Director). The Process and Product of T&I High School Level Vocational Education in the United States. Pittsburgh, Pennsylvania: American Institutes for Research, 1965.

    The first in a series of reports planned to describe the products of vocational education in the whole country by the occupations, education, and experience of the students of trade and industrial training. This study explores the differences in post-high school occupational and educational experience of T&I and academic course graduates by type of school attended (vocational or comprehensive), size of school attended (small vs. large enrollment), race, region, post-graduate mobility, and year of graduation.

30. Flanagan, J. C., et al. The American High School Student. (Technical Report to the U. S. Office of Education, Cooperative Research Project No. 635), Pittsburgh, Pennsylvania: Project TALENT-Office, University of Pittsburgh, 1964.

    A major study of the American high school student of the 1960's includes a follow-up of high school students who have left high school and who were or were not employed. Of the sample returning the questionnaire, 37 per cent of the males and 37 per cent of the females held full-time jobs in 31 occupational categories.

31. French, Joseph L. (Principal Investigator). "Employment Status and Characteristics of High School Dropouts of High Ability." Washington, D.C.: U. S. Department of Health, Education and Welfare, Division of Vocational and Technical Education, Occupational Research and Planning Program, 1965. (Project Summary.)

    An on-going study of high school dropouts of above average intellectual ability designed to determine employment status, interests, and personality patterns. Data collected should provide suggestions for development of training programs and methods of identifying students who would benefit from such training.

32. Kahn, R. L. and Bachman, J. G. "Study of Youth in High School, at Work and Unemployed." Ann Arbor, Michigan: University of Michigan, 1965. (Mimeographed Proposal Summary.)

    A three year longitudinal study of the effects of education and socialization--high school, employment, and unemployment--in late adolescence in a cross-section of male students in the U. S. The students are first studied when they are high school sophomores, then recontacted at 18 month intervals in an attempt to isolate enviromental influences upon change in attitudes.

33. Kaufman, Jacob J. "An Experimental Program to Compare Education Versus Training for Young School Dropouts." (Mimeographed Project Summary, Sponsored by the U. S. Office of Education, Bureau of Research.)

    An investigation of the economic and psychological effects of providing high school dropouts with either extended training for a specific occupation or with the opportunity to earn a high school diploma. Comparisons of these two groups will be made in this study covering July 1965 - March 1970.

34. Kaufman, Jacob J. and Shaefer, Carl J. "The Preparation of Youth for Effective Occupational Utilization--A Preliminary Report." University Park: Institute for Research on Human Resources, Pennsylvania State University, 1965.

    A preliminary report of a study to determine whether high school graduates of the classes 1960 to 1964 in nine cities were prepared for employment. Five thousand graduates, in vocational, academic, and general curriculum have been interviewed. Work supervisors are rating performances and union officials and employers have also been interviewed. The study aims to investigate the extent of placements among various groups of respondents.

35. Levenson, Bernard. Past, Present, and Projected Educational Research. Baltimore, Maryland: Johns Hopkins University, September 1965. (Mimeographed.)

Past research comprised a follow-up study of vocational students after high school graduation in order to explore differences in occupational and employment opportunities between white and non-white youth. Data were provided through Social Security work history records. Present research concerns a follow-up of graduates of 12 high schools in 4 cities. Projected research will be the analysis of the data of the present research study.

36. Little, J. Kenneth. The Occupations of Non-College Going Youth. (Research Report No. 2). Madison: Center for Studies in Vocational and Technical Education, University of Wisconsin, 1965. (Mimeographed.)

A study concerned with the current occupational status of 20 per cent of the Wisconsin male high school graduate population of 1957, seven to eight years following graduation. In the study plans and aspirations before graduation are compared with current educational and occupational status. Comparisons made between graduates who received vocational training and those who received no further training or education revealed that vocational students tended to be slightly lower than average in scholastic aptitude and achievement although similar to the class as a whole in background characteristics and tended to reach a middle position as far as occupational prestige was concerned.

37. Loomis, William G. "Statewide Study of Systematic Vocational Education Planning, Implementation, and Evaluation." Salem: Oregon State Department of Education, Division of Community Colleges and Vocational Education, 1965. (Mimeographed Proposal Summary.)

A two year study which will be concerned with the relationship between vocational education training and skill requirements for employment. The study plans to develop and evaluate data gathering instruments for assessment of human resources and occupational opportunities.

38. Mallinson, George G. "Characteristics of Non-College Vocationally-Oriented School Leavers and Graduates." Kalamazoo: School of Graduate Studies, Western Michigan University, 1965. (Study Proposal.)

    This study proposes to identify certain characteristics of post-high school age persons enrolled in educational programs of non-college grade, employed, or seeking employment; to compare the characteristics with peers who have enrolled in college; and to determine if high school vocational students are more likely to enter post-high school vocational programs after leaving high school than those who elect other types of high school programs.

39. McKechnie, Graeme. "A Study of the Utilization of Vocational Education by Workers in LaCrosse, Wisconsin," Annual Report. Madison: Center for Studies in Vocational and Technical Education, University of Wisconsin, 1965.

    A study, in progress, of vocational school students enrolled in night courses in terms of marital status, educational attainment, employment, and reasons for taking courses. Comparisons between students who completed training and dropouts were made and detailed analysis is planned for the future.

40. Sewell, William H. "Factors in Educational and Occupational Aspiration and Achievement." Madison: Center for Studies in Vocational and Technical Education, University of Wisconsin, 1965. (Proposal Summary.)

    An investigation of the social and social psychological factors associated with differences in educational aspirations and achievements of 10,000 Wisconsin high school seniors. Included is a follow-up of high ability students over a five year period with regard to college, entry into the job market, and career patterns.

41. Twyman, J. Pascal. (Project Director) Progress Report - School Dropout Research Project. Stillwater: Research Foundation, Oklahoma State University, 1965. (Mimeographed.)

    A pretest postest design of a current study of an experimental vocational and academic program for recent high school dropouts. The dropouts have been divided into three experimental groups assigned to either vocational, academic, or vocational and academic training. Comparisons will be made with a control group which was not given any training.

42. Ulman, Lloyd. (Principal Investigator). "Entry and Job Change in a Large Metropolitan Labor Market Area." Berkeley: Institute of Industrial Relations, University of California, 1966. (Mimeographed Study Proposal.)

A proposal for a number of studies which will be concerned with the San Francisco Bay area labor market and its relationship to vocational education needs. The following sub-projects are planned: analysis of labor market data for the purpose of projecting occupational, industrial, and labor force changes; survey of employer policies and changes, survey of union policy and involvement in training programs, survey of coordination between employment and placement service personnel and school counsellors in providing vocational guidance by comparison of high school dropouts and graduates, study of labor mobility and vocational training, and study of the impact of automation and changes in skill requirements.

III. METHODOLOGY AND BACKGROUND REFERENCES

43. Craig, Judith S. (ed.). Conference on Follow-Up Studies in Educational Research, November, 1965. Madison:Center for Studies in Vocational and Technical Education, Industrial Relations Institute, University of Wisconsin, 1965.

Proceedings of a conference concerned with the objectives and methodology of follow-up surveys involved in vocational education evaluation. Included are participants' plans for follow-up research.

44. Evans, Rupert N. (Chairman, Committee on Vocational, Technical, and Practical Arts Education). Review of Educational Research, XXXII, 4, Washington, D. C.: American Educational Research Association.

Review issue devoted to vocational education includes descriptions of the types of vocational education as well as current research and a bibliography for each type. The chapter on distributive education by Harland Samson includes a discussion of the use of follow-up studies.

45. O'Conner, Thomas J. Follow-Up Studies in Junior Colleges: A Tool for Institutional Improvement. Washington, D. C. American Association of Junior Colleges, 1965.

A discussion of the need for follow-up studies of junior college students and a manual which includes a detailed account of how to conduct a follow-up study. Sample questionnaires actually used by junior colleges in conducting their own studies are included.

46. Orr, David B. and Neyman, Clinton A., Jr. "Considerations, Costs, and Returns in a Large-Scale Follow-Up Study," The Journal of Educational Research, 58 (April, 1965).

An article which discusses a follow-up study and concludes that a large-scale study is an expensive process and becomes costlier as non-respondents are urged to respond. In conducting the Project Talent follow-up study, authors found that a new questionnaire was more effective in boosting the return rate than reminders. Efforts made to enlist the cooperation and involvement of students was believed to be worthwhile in terms of quantity and quality of responses.

47. Schwarzweller, Harry K. Research Design, Field Work Procedure, and Data Collection Problems in a Follow-Up Study of Young Men from Eastern Kentucky. (Rural Sociology Department, R. S. 21), Lexington: University of Kentucky, 1963.

A discussion of the methodology used to conduct a follow-up study of male youth ten years after they were enrolled in the eighth grade. One aspect of this study planned to determine career patterns and economic life chances of the youth by securing data about first jobs, occupational mobility, levels of living, social mobility, career aspirations, and residential mobility.

48. United States Commission on Civil Rights Report - 3 (Employment). Washington, D. C.: GPO, 1961.

A report on the relationship between civil rights and employment. Contains some data on differences in vocational training and subsequent placement between whites and Negroes and on the role of unions.

49. United States Department of Labor. Man-Power Report of the President and a Report on Manpower Requirements, Resources, Utilization, and Training. Washington, D. C.: GPO, 1964.

A report to Congress of the most important developments and major continuing problems in employment and unemployment during 1963. Areas of major concern, such as technological innovations, preparation for work, and disadvantaged workers are the subjects of separate chapters. Contains results of a special study showing where various categories of workers obtained training for work skills.

50. Vivian, Neal E. "Evaluative Criteria for Distributive Education: Methods of Evaluation," Business Education Forum, 15 (April, 1961), Washington, D. C. United Business Education Association, National Education Association.

A short statement of methods of evaluation of distributive education programs and students taking these courses--testing, use of student records, and on-the-job training evaluation.

IV. RELEVANT MATERIAL REQUESTED FOR THIS REPORT BUT NOT RECEIVED

51. Larsen, Milton E. "A Study of the Characteristics of Students, Teachers and the Curriculum of Industrial-Technical Education in the Public Community College of Michigan." East Lansing: PhD Dissertation, Michigan State University.

52. Nelson, Howard F. "Characteristics of Full-Time Students in Post-Secondary Trade Courses." Minneapolis: University of Minnesota, 1966. (Proposal).

53. Smith, Max S. A Bibliography Relating to Selected Problems in Community Junior College Education. East Lansing: Michigan State University, 1961.

54. Southern Colorado State College. "An Analysis of the 1960 Graduating Class at Pueblo College." Pueblo, Colorado.